

Rolling bearing

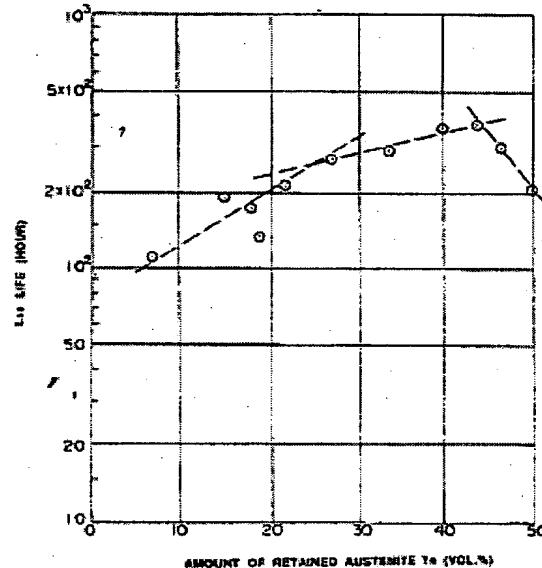
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A rolling bearing having an inner ring, outer ring and rolling element, at least one of these elements being made of one of the following first, second or third medium-carbon manganese steels. The first medium-carbon manganese steel includes C: 0.4 to 0.7 wt. %, Si: 0.15 to 1.2 wt. %, Mn: 1.2 to 1.7 wt. %, Al: 200 to 300 ppm, Ti: up to 40 ppm, N: 100 to 200 ppm, S: up to 80 ppm, O: 9 ppm and the balance of Fe. The second steel includes at least one of Nb: 0.03 to 0.08 wt. % and V: 0.1 to 0.15 wt. % in addition to the elements of the first medium-carbon manganese steel. The third medium-carbon manganese steel includes at least one of Nb: 0.03 to 0.08 wt. % and V: 0.1 to 0.15 wt. % instead of Al and N and includes the other elements of the first medium-carbon manganese steel. Each medium-carbon manganese steel is subject to carburizing or carbo-nitriding so as to include a case with a 25 to 45 vol. % retained austenite.



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